

In *M. waterhousii* the ears are longer than the head, the front margin of the nose-leaf is thickened and raised above the muzzle, and the extremity of the terminal nose-leaf obtuse: the last caudal vertebra is alone free; and its joint is completely enveloped in the interfemoral membrane.

Both *M. californicus*, Baird, and *M. mexicanus*, Saussure (evidently synonyms of *M. waterhousii*), are described as having the last caudal vertebra alone free; and in Mr. Allen's description* of *M. californicus* the length of the free portion of the tail is given as 0·2 inch. I have examined many specimens of *M. waterhousii* of different ages; and in all I have found the last caudal vertebra alone free.

Although the specimens in the Paris Museum are not full-grown, as the extremities of the finger-bones show, yet the metacarpal and phalangeal bones are as long as those of perfectly adult specimens of *M. waterhousii*. It follows, therefore, that this species is larger than *M. waterhousii*.

MISCELLANEOUS.

Researches on the Phenomena of Digestion and on the Structure of the Digestive Apparatus in the Belgian Myriopods. By FÉLIX PLATEAU. (Abstract by the Author.)

THIS work is the natural sequence of my "Recherches sur les phénomènes de la Digestion chez les Insectes"†. Like this, it contains a large number of experiments; only, the digestive tube of the Myriopods being very imperfectly known, I have been obliged, beside the physiological part, to give considerable space to purely anatomical observations.

The group which has offered most new anatomical facts is the genus *Cryptops*. These animals are distinguished by an extremely ample buccal intestine, playing the part of the crop of the carnivorous Coleoptera, and by a very remarkable valvular apparatus (gizzard) previously unknown in the Myriopods. It is a spherical or ellipsoidal enlargement, very muscular, furnished within with numerous setæ and even sometimes with spiny points, all directed towards the œsophagus.

On carefully studying the terminal intestine, we find that, as M. Gervais had already shown in some genera, the species of *Glomeris* are far from being the only Myriopods in which this portion of the alimentary canal presents convolutions. A simple curvature, or one or several loops exist in the terminal intestine of *Iulus*, *Geophilus*, *Himantarium*, and *Cryptops*.

My memoir also contains a detailed examination of the anterior

* Bats of North America, p. 4 (1864).

† Ann. & Mag. Nat. Hist. 1875, vol. xvi. p. 152.

(salivary ?) glands, which open always into the mouth and never into the forcipules, and of the Malpighian tubes, and, finally, a large number of histological observations which it is impossible for me to summarize.

The physiological part comprises special researches on alimentation, on the manner in which the *Lithobii* kill their prey, and, lastly, on digestion properly so called. In *Cryptops* the aliments accumulate in the spacious buccal intestine of which I have spoken above, are retained there by the valvular apparatus, and are there transformed by the digestive liquid secreted by the middle intestine situated further on.

In the other Myriopods the principal digestive phenomena take place in the true middle intestine. The liquid secreted is neutral, sometimes slightly alkaline, in *Lithobius*, *Cryptops*, *Himantarium*, *Geophilus*, and *Glomeris*; in *Iulus* alone it is slightly acid. This liquid forms an emulsion of the fats, and evidently dissolves the albuminoid substances.

I have been unable completely to elucidate the function of the anterior glands. The arrangement of their excretory canals and other characters prove that in the carnivorous Myriopods these are not venomous glands*: but their secretion, at least in *Lithobius* and *Himantarium*, does not possess the characteristic property of the true saliva of the vertebrates and of insects; it does not transform starch into glucose.

As far as we can judge, the Malpighian tubes of the Myriopoda act precisely in the same manner as those of insects; they produce uric acid, urates (*e. g.* urate of sodium), and oxalate of calcium. They are therefore depuratory urinary organs.—*Mém. de l'Acad. des Sci. de Belgique*, tome xlii. 1876.

On the Femoral Brushes of the Mantidæ and their Function.

By J. WOOD-MASON, Esq.

The author states that, while recently examining a specimen of a species of *Hierodula* from the Nicobars, his attention was arrested by two brightish oblong spots, situated one near the distal end of each of the fore femora and nearer to the lower dentate than to the upper entire edge of the joint—and that, on examining these spots more closely by the aid of a lens, he had found that they were brushes of stiff hairs, all of which were directed away from the upper edge of the femur, some of which (namely, those forming the upper half of the brushes) were closely appressed to the surface and threw back the light strongly, while the rest projected almost straight out from it and were the stiffest of all. He had been unable to find any account of these structures in any entomological work to which he had access; and neither M. de Saussure, who had recently published an admirable account of the external anatomy and habits of the whole family, nor Dr. Fischer, the author of the learned Latin work on the Orthoptera of Europe, had made

* The true venomous glands, which I have succeeded in isolating in some species, will form the subject of a future memoir.